"Noncommunicable diseases (NCDs) are the top killers in the Philippines. Of the total deaths in 2008, 57% are due to the "fatal four" NCDs, namely cardiovascular disease, cancer, diabetes, and chronic respiratory disease. It is estimated that 35 to 50 percent of NCD deaths occurred before the age of 60. A significant proportion of Filipino adults continue to be exposed to the NCD risks of tobacco and alcohol use, unhealthy diet, and physical inactivity."

- The World Health Organization- Western Pacific Region

The WHO's Western Pacific Region declares noncommunicable diseases (NCDs) as the *top killers* in the Philippines.

Every day, many Filipinos die from heart disease and cancer while many are suffering from diabetes, arthritis, and respiratory disorders. That is why it is essential that at a young age, everyone should be informed about the risks of these dreaded NCDs and how to prevent them.

NCDs are non-infectious illnesses but can be inherited or developed based on the individual's lifestyle. Heart disease, cancer, liver cirrhosis, chronic renal failure, obesity, stroke, and Type 2 diabetes are familiar cases of noncommunicable diseases. These conditions develop gradually over the lifetime of the person. Pain and other symptoms usually manifest when the person is in their 40s or 50s. The choices and behavior that teenagers and young adults make sets the tone whether they would develop these conditions later in life.

Most individuals will not notice, but their lifestyle is causing the development of these NCDs. An individual's usual routine, food intake, vices, or way of life can develop diseases known as lifestyle diseases. These diseases are greatly affected by vices like smoking, drug use, alcohol consumption, and having no physical exercise, especially for older people.

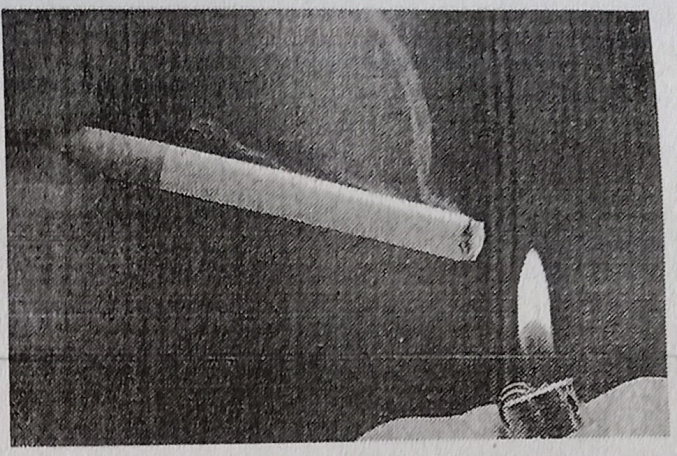
People in well-developed countries who consume big amounts of meat, dairies, sugar-rich food and alcoholic drinks without an active lifestyle are more prone to obesity and other related NCDs. For example, the changes in eating habits led to higher incidents of cancers in the lungs, breast, prostate, endometrium and colon. Countries with low sugar, little meat, and high starch consumption on the other hand, have lower incidence of related NCDs.

SMOKING

Why is smoking harmful?

Almost every organ in the body is damaged when a person smokes. It weakens the body and leads to many diseases. Around five million die yearly from tobacco, wherein one individual dies every eight seconds. Each stick of cigarette has more than 4,000 chemicals and consuming it would cut an individual's life for at least five minutes. Others who are exposed to cigarette smoke are also at risk from its chemical effects. The smoke contains hydrogen cyanide (a deadly substance used in gas chambers), insecticides, methanol and butane fuels, benzene (causes leukemia), cadmium, and formaldehyde (used for embalming). Many of these chemicals have been studied intensively over the past decades. The chemical mixture (i.e., cigarette smoke) impairs the function of the cardiovascular and respiratory system. It accelerates atherosclerosis and destroys the cilia in the lungs.

Tar, nicotine, and carbon monoxide are substances from tobacco that are among the most harmful to health. *Tar* is a harmful byproduct of smoking cigarettes. This toxic substance is carcinogenic and accumulates inside the respiratory system. Tar build-up disrupts clearing process of the lungs and ruins air sacs. *Nicotine* is a toxic chemical compound that mostly consists nitrogen, which also makes cigarettes addictive. Nicotine makes the heart beat fast, brings lightheadedness, and upsets stomach. *Carbon monoxide* is a poisonous chemical from burnt cigarette that makes the heart do more work to supply sufficient oxygen in the body. Thus, smokers have higher risks of having cardiovascular diseases like angina and heart attacks.



What are the kinds of tobacco smoke?

1. *Mainstream smoke*, commonly known as "first-hand smoke" is the smoke from lit cigarette that is both inhaled and exhaled.

2. *Second-hand smoke* is a very dangerous smoke when taken in. It is the smoke puffed out by smokers called environmental tobacco or "sidestream" smoke.

Why do people start smoking?

a. Parental Role Model
b. Adolescent Experimentation and Rebellion
c. Depression
d. Limited Education
e. Weight Control
f. Aggressive Marketing
g. Stress
h. Addiction

Why do people keep smoking?

a. Pleasure
b. Fear of weight gain
c. Nicotine Dependence
d. Use of other substances (many smokers also use alcohol and drugs)

3. *Third-hand smoke* refers to cigarette offshoots which is attached to the smokers' hair and clothing as well as various surfaces like walls, floors, furniture, chairs, and toys. This will remain in the environment even if the smoke is already gone.

Did you know that...

- In the Philippines, 28% of the adult population (age 15+) smokes tobacco.
- Almost half of men (48%) and nine percent of women smoke.
- Among the youth, (age 13–15), 17.5% smoke cigarettes (boys, 23%; girls, 12%) and eight percent currently use tobacco products other than cigarettes (boys, eight percent; girls, seven percent).

Health Consequences

- Smoking is estimated to kill over 73,000 Filipinos each year.
- Among the youth (age 13–15), 55% are exposed to second-hand smoke at home and 65%in public places.
- Almost 40% of adults are exposed to second-hand smoke in their homes and 37% of workers are exposed to second-hand

POOR DIETARY HABITS

How are healthy eating habits developed?

Dietary habits are the usual choices of food that people make. Diet affects an individual's health condition. For a person to grow and develop, he/she needs a healthy and balanced diet that provides energy for everyday activities. Having a healthy and balanced diet early reduces the chance of developing diseases like cancer, osteoporosis, and diabetes in the future.

What is a poor dietary habit?

Poor dietary habits occur when the person does not follow the principles of good nutrition—adequacy, balance, and variety. *Adequacy* refers to moderate amounts of nutrients to maintain normal body function. *Balance* refers to correct combination of nutrients, and *variety* refers to consumption of different types of food products.

Poor dietary habit is about not eating enough healthy food. Underconsumption and overconsumption of unhealthy food and drinks and intake of low-fiber, high-fat, high-salt, and high-sugar food are all part of poor dietary habits that affect the amount of essential nutrients in the body such as vitamins, minerals, protein, fiber, as well as fluid.

What are the usual reasons of developing unhealthy eating?

- Learning from parents/guardians without healthy eating habits
- A family not having meals together
- Uninformed about healthy eating
- Busy schedule
- Too much traveling
- Lack of desire to eat healthy
- Poverty
- Extreme emotional conditions

Poor dietary habits lead to malnutrition, resulting to stress, tiredness, sleep deprivation, weak brain functions, indigestion, and heart problems. It adds up to the risk of developing diseases and health problems such as:

- obesity
- tooth decay
- high blood pressure
- high cholesterol
- heart disease and stroke
- type-2 diabetes
- osteoporosis
- certain types of cancer
- depression
- eating disorders

Starting a healthy eating habit begins with knowing what you eat. Eating should be planned. This includes evaluation of the food intake whether it provides sufficient nutrients or is harmful to your body.

Eating only for the reason to be "in" with peers is unhealthy. Eating to overcome the feeling of rejection, depression, or anxiety is unhealthy as well. Eating to cope with feelings may be detrimental and lead to eating disorders.

SEDENTARY LIFESTYLE

Sedentary lifestyle occurs when an individual lacks the recommended level of regular physical activity or if he/she is physically inactive. There are recommended level of physical activity for every age group, which was proposed by many international and national health organizations such as the Centers for Disease Control and Prevention, World Health Organization, American Heart Association, American College of Sports Medicine, and the Department of Health.

Physical inactivity is the leading risk factor of death worldwide. According to the WHO, 60–85% of the world's population does not have enough physical activity. In the Philippines, the 7th National Nutrition Survey in 2008 reveals that nine out of ten Filipinos do not exercise regularly. The survey also show that individuals who are less active and less fit have 30–50% probability of getting high blood pressure and cardiovascular diseases.

What does physical inactivity causes you?

- Increase risks of certain cancers
- Contribute to anxiety and depression
- Risk factor to certain cardiovascular diseases
- Increase risks of having a coronary heart disease and obesity
- Decrease in skeletal muscle mass due to excessive sitting
- High blood pressure and increased cholesterol levels

Did you know that...

- An adult should complete a minimum of 150 minutes of moderate exercise, or 75 minutes of vigorous regimen once a week.
- Walking 10,000 steps a day (approximately five miles) is the ideal goal for improving health and reducing the health risks caused by inactivity.

Source: Centers for Disease Control and Prevention

What are the types of diseases associated with unhealthy lifestyle?

Cardiovascular Disease – a disease of the heart and blood vessels and is the leading cause of death in the Philippines.

What are the types of cardiovascular diseases?

1. *Arteriosclerosis* – a condition causing the arteries to harden and thicken. Some types are natural to growing old.
2. *Atherosclerosis* – type of arteriosclerosis where deposited fat hardens and becomes plaque on arterial walls. Plaque build-up can begin as early as two years old.
3. *Coronary heart disease* – coronary arteries (pathway of blood to the heart muscles) are narrowed or blocked; a disease of the coronary vessels and not the heart.

Major Risk Factors for Coronary Heart Disease

1. Smoking
2. Diabetes
3. Hypertension
4. Cholesterol
5. Age
6. Obesity
7. Physical Inactivity

- *Heart attack* - cardiac muscle failure due to lack of blood flow to the heart. Signs include painful pressure in the center of the chest spreading to the shoulders, neck and jaw, lightheadedness, sweating, nausea, and shortness of breath.
- *Angina Pectoris* – chest pain from narrowed coronary arteries due to inadequate oxygen for the heart. Angina attack usually lasts less than five minutes.
- *Rheumatic Fever* – the immune system attacks the heart and can cause fever, weakness, and damage to its valves. It is common among teens and results to a permanent damage

- *Heart Rhythm Abnormalities/Arrythmia* – irregular heart rhythm (i.e., bradycardia, tachycardia, palpitation) brought about by faulty electrical conduction system that is worsened by uncontrolled stress levels and high caffeine intake.
- *Congestive Heart Failure* – the heart is not able or below its normal capacity to pump blood, causing liquid to accumulate in the lungs and other areas of the body. Reducing salt and salty foods help manage this condition.

Did you know that...

- An individual should participate in a minimum of 150 minutes of moderate exercise, or 75 minutes of vigorous regimen.
- Walking 10, 000 steps a day (approximately 5 miles is the ideal goal to set for improving health and reducing the health risks caused by inactivity.

Source: Centers for Disease Control and Prevention

2. **Cancer** – a disease where cells divide in an uncontrolled pace. These cells can form a tumor, which can be identified benign or malignant through a biopsy procedure. Cancer is not contagious or caused by injuries or accidents. One of the risk factors associated with cancer is unhealthy lifestyle. The most common types of cancer in terms of incidence is breast cancer, lung cancer, prostate cancer, and colon cancer. Most cancer deaths are due to lung cancer, which could have been prevented if the person did not smoke. In addition, healthy diet and exercise decreases the risk of cancer development. It should be noted that there is a greater chance of survival when cancer is detected early.

What is the difference between malignant and benign tumor?

- *Malignant* is cancerous. The tumor can spread to invade and destroy nearby tissues and body parts. This process is called metastasis.
- *Benign* is not cancerous. Benign tumors may increase in size but do not invade other body parts. It is typically harmless unless it obstructs normal tissues or organs.

What are the four major categories of cancer?

- *Carcinoma* is the most common of the major categories; an invasive malignant tumor from epithelial tissue that tends to spread to other body parts. Cancers of the skin, breast, uterus, prostate, lung, stomach, colon, and rectum are examples of carcinoma.
- *Sarcoma* is a connective or supportive cancer, which include muscle, bone, fat, blood vessels, and cartilage cancers.
- *Lymphoma* arises in cells of the lymphatic or the immune system tissues characterized by abnormal production of white cells and decrease in resistance.
- *Leukemia* is the cancer of the blood or bone marrow characterized by an abnormal production of blood cells, usually leukocytes or white blood cells.

3. **Diabetes or Diabetes Mellitus** – disease resulting from a condition of the body wherein the body is not able to produce or effectively use insulin. Insulin is a hormone that is produced in the pancreas, which regulates the utilization of glucose. The presence of insulin instruct the cells to uptake glucose that is in the blood. Low insulin production can impair glucose uptake, which elevates glucose level in the blood. Many people produce sufficient amounts of insulin; however, the tissues and cells develop a resistance to the hormone which leads to impaired glucose uptake even if insulin is present. Diabetes impairs several organs in the body, which causes kidney damage, blindness, and atherosclerosis. There is no cure for diabetes.

What are the types of diabetes?

- *Type 1 Diabetes* is insulin-reliant diabetes because the body produces little or no insulin at all. The immune system destroys the cells producing insulin, which causes the build-up of sugar in the blood and loss of sugar in the urine. Its symptoms include increased

thirst, frequent urination, continuous hunger, weight loss, blurred vision, and tiredr. This type of diabetes relies on daily insulin injections and follows a special diet. It usu occurs in children and young adults.

- *Type 2 Diabetes* is non-insulin dependent. This occurs when the body produces insulin but it cannot be used by the cells. This type of diabetes is manageable through oral medication and a lifestyle based on diet and exercise programs. Symptoms are usually not very obvious and may go undetected for many years.
- *Gestational Diabetes* occurs in certain pregnant individuals. The hormones cause the body not to respond to the insulin produced by the body. This is not harmful to the baby and can be treated only with proper diet. Gestational diabetes usually regresses after childbirth but has higher chances of developing into Type 2 diabetes.

4. **Chronic respiratory disease** – commonly called chronic obstructive pulmonary disease (COPD); occurs in the air paths and other parts of the lungs. Symptoms include breathlessness, chronic cough, and excessive mucus production. COPD can be life-threatening and may lead to death if not detected and cured early.

Major risk factors of COPD include:

- tobacco smoking;
- indoor air pollution;
- outdoor air pollution; and
- occupational dusts and chemicals like vapors, irritants, and fumes.

What is a healthy lifestyle?

"Health is wealth." A healthy lifestyle is all about making one's health and well-being a priority. It is a choice made by an individual, a commitment made for his own good and that of his loved ones.

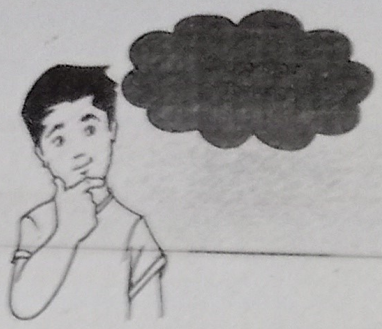
- Pilipinas Go4Health 2013

What are the ways to prevent lifestyle diseases?

Noncommunicable disease prevention requires an individual to follow certain guidelines leading to a healthy lifestyle. The following guidelines will lead to healthy living habits:

- **Eat healthy food.** This include fruits, vegetables, and whole grains. Go for lean meats and low-fat dairy products. Do not eat food with too much sugar or fat, or dine in at fast food. Eat desserts and delicacies in moderation.
- **Do daily routines of physical activity.** You do not need to go to the gym regularly or do marathons but rather, include physical activities into your daily routine.
- **Do not smoke.** Gaining a little weight is a lesser risk than to keep smoking. Many who quit smoking did not gain weight.
- **Drink moderate amounts of alcohol only.** Two average-sized drinks daily for men; one for women.
- **Manage stress.** Many individuals use eating as means of managing stress. A lot of stress will be tough in making healthy changes to your lifestyle.

Likewise, changing the way you think helps you become more successful in achieving a healthy body:

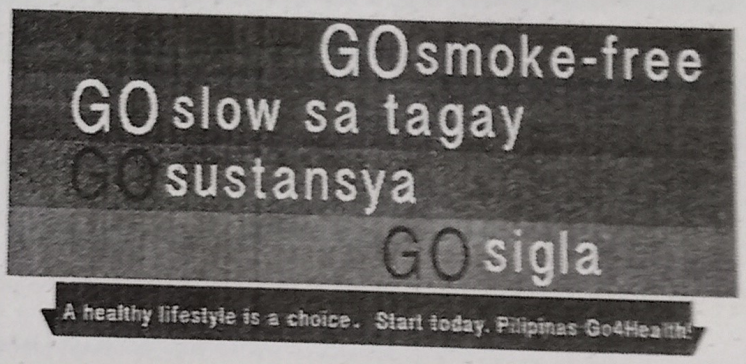


1. **Stop comparing yourself to others.** A healthy body does not come in one shape and size. Do not get frustrated over unrealistic body shape; being healthy is more important.
2. **Awareness of how hungry or full you are.** Be aware of why you eat and how much you need to eat.
3. **It's not about the diet; it's more of the routine.** Dieting almost never works over the long term. It is more of the routine of eating properly.
4. **Be determined that you're going to improve your health**, instead of just deciding to go on a diet. For instance, you may think of what you want: to be more fit; lower blood pressure; lower blood sugar (for concerns over diabetes); and lower cholesterol.

What are some government programs and policies to prevent and control noncommunicable diseases?

The DOH and its partners lead a nationwide lifestyle movement called "Pilipinas Go4Health" which aims to inform and encourage all Filipinos to practice a healthy lifestyle by committing to physical activity, proper nutrition, as well as minimizing or quitting cigarette smoking and alcohol consumption. The movement advocates establishment of a sustainable environment for healthy living (Department of Health 2013).

The Go4Health Program includes the "Go Smoke-free," "Go Slow sa Tagay," "Go Sustansya," and "Go Sigla."



The *Go Smoke-free* highlights the bad effects of smoking. Every hour, ten Filipinos die from of illnesses related to cigarette smoking. There are 17.3 million Filipinos, ages 15 years and up who smoke. Smoking causes lung cancer, emphysema, and bronchial disorders.

Go Slow sa Tagay advocates the use of alcoholic drinks in moderation. It features the major health risk of consuming too much alcohol as well as related drunk-driving accidents. A related law was signed to conduct sobriety and breath tests on drivers found to have "indications" or are "under the influence" of alcohol. Stiff penalties will be given to violators.

Go Sustansya aims to prevent hypertension and cardiovascular diseases as well as obesity by campaigning for reduced consumption of salt, sugar, fats, and high-calorie food. Hence, increased intake of fiber lowers cholesterol and blood sugar levels.

Go Sigla emphasizes on regular exercise of at least three to four times a week. Out of 100 Filipino adults, only seven do regular exercises.

In 2012, the National Nutrition Council (NNC) also came up with the Nutritional Guidelines for Filipinos:

The 2012 Nutritional Guidelines for Filipinos

1. Eat a variety of food everyday to get the nutrients needed by the body.
2. Breastfeed infants exclusively from birth up to six months. Give appropriate complementary food while continuously breastfeeding up to two years and beyond for optimum growth and development.
3. Eat more vegetables and fruits everyday to get the essential vitamins, minerals, and fiber for regulation of body processes.
4. Consume fish, lean meat, poultry, egg, dried beans, and/or nuts daily for growth and repair of body tissues.
5. Consume milk, milk products, and other calcium-rich food such as small fish and shellfish everyday for healthy bones and teeth.
6. Consume safe food and water to prevent diarrhea and other food and water-borne diseases.
7. Use iodized salt to prevent Iodine deficiency disorders.
8. Limit intake of salty, fried, fatty and sugar-rich food to prevent cardiovascular diseases.
9. Attain normal body weight through proper diet and practice moderate physical activity to maintain good health and prevent obesity.
10. Be physically active, make healthy food choices, manage stress, avoid alcoholic beverages, and do not smoke to help prevent lifestyle-related noncommunicable diseases.

Source: http://www.nnc.gov.ph/home/item/5-10-nutritional-guidelines-for-filipinos-mga-gabay-sa-wastong-nutrisyon-para-sa-pilipino

SUMMARY

Noncommunicable diseases (NCDs) are the main cause of deaths in the Philippines. These diseases are either inherited or developed through lifestyle. Acquiring these diseases can be prevented by avoiding risk factors like smoking, poor diet, and lack of physical activity. Smoking produces harmful chemicals, which weaken parts of our body and eventually lead to diseases such as cancer. Poor dietary habits weaken the body's defenses against diseases. Living with little physical activity or sedentary life also increases the risks of developing diseases. Following a lifestyle without vices like smoking and drinking, having a healthy eating habit, and appropriate physical activity reduces and eliminates the risks of developing NCDs.

LET'S DO THIS!

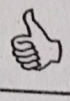
Activity 1: Fill in the Chart

1. How do smoking, poor dietary habits, and sedentary lifestyle cause lifestyle diseases? Use the chart to write your answer.

Smoking	Poor Dietary Habits	Sedentary Lifestyle

Activity 2: Physical Activity Log

A. Make a one week Physical Activity Log using the format below. Make sure that your choice of activity increases the heart rate and is performed within a minimum of 30 minutes, practical (e.g., climbing the stairs), and/or related to household chores (e.g., mopping the floor, walking the dog, etc.). Push-ups and curl-ups may be included in the routine. Put a check in the thumbs-up column if you were able to accomplish your daily activity and in the thumbs-down column if not.

DAY	Activity/Type of Workout	Number of Minutes/ Number of Repetitions		
MONDAY				
TUESDAY				
WEDNESDAY				
THURSDAY				
FRIDAY				
SATURDAY				
SUNDAY				

B. Answer the following questions.

1. Did you have a hard time following your physical activity log? Why?

_____

_____

_____

_____

2. Do you think you can continue to be physically active and prevent yourself from lifestyle diseases? Why?

_____

_____

_____

3. What are the factors that hinder you in accomplishing your physical activity log?

_____

_____

_____

4. What do you need to do to have a physically active lifestyle?

_____

_____

_____

Activity 3: What Would You Do?

Answer the following:

1. Your cousin, Carlo, believes that exercising takes too much energy, causes pain, and will take most of your time. How would you encourage Carlo that his ideas about physical activities are not true?
2. Your friend, Gail, gets angry because his basketball coach insists that the team needs to stretch 10 minutes after every training session. He thinks that this is a waste of time and tries to skip it. What would you say? Why?
3. What will you tell if your elderly brother says he does not need to exercise because he claims that he keeps in shape by eating the right food, watching his weight, and avoiding alcohol?

Activity 4: Poster Making

Create a poster about noncommunicable diseases caused by having unhealthy lifestyle. Make sure to post it in your school's bulletin board and in your social media account (Facebook, Twitter, etc.).

Activity 5: Group Work

Form a group and conduct a seminar about "How to Prevent Lifestyle Diseases" for lower grade levels." Make sure to include in your seminar an example of "Physical Activity" suitable to your participants.